CASE REPORT

CHEYLETIELLA BLAKEI INFESTATION IN A CAT

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Introduction

Cheyletiella are fur mites which have been associated with skin lesions in animals as well as in man (1, 8, 11, 12, 15, 16). First discovered on rabbits in 1878 in France (10), these mites have subsequently been recovered from dogs and cats (4). The first report of *Cheyletiella* from cats was made by Hirst in 1917 in England (6), but a good number of similar observations have since been documented from other parts of the world (4, 7, 15).

What have been so far reported of *Cheyletiella* infestations from Canada, however, are *C. parasitivorax* in hares (9) and *C. yasguri* in dogs (1, 3). The present report is on *C. blakei* from a cat with dermatosis.

History

In June 1975, a one year old male Persian cat was presented to us with a history of scratching for the past five weeks and small sores over the head and neck. The owner had bought the cat from a commercial kennel in Montreal and the animal had since been kept in her apartment with a four year old mongrel cat which had been picked up from a Montreal street. Previously similar skin sores were seen on the mongrel cat, but the condition disappeared without treatment.

Clinical and Parasitological Findings

On casual observation, the coat of the cat was very clean, apparently as a result of the owner shampooing and grooming the animal regularly. On examining the fur closely, however, discrete pityriasis, with sores measuring 1–5 mm in diameter, were revealed on the skin over the head, neck and back.

Skin scrapings were obtained from affected areas and examined microscopically in mineral oil and potassium hydroxide mounts. *Cheyletiella* mites, as characterized by their palpal claws (Figure 1), tarsal combs (Figure 2) and eggs (Figure 3), were demonstrated. Virtually all the developmental stages of the mite were recovered. On the basis of the oval-shaped sense organ on genu 1 (Figure 4) the mite was identified as *C. blakei* (14). Since no other external parasites were seen in the skin scrapings, a diagnosis of dermatosis attributable to *C. blakei* was made. Accordingly, treatment of the cat with an acaricide was implemented. Within approximately two weeks of the first application of the acaricide the coat problem of the cat had disappeared.

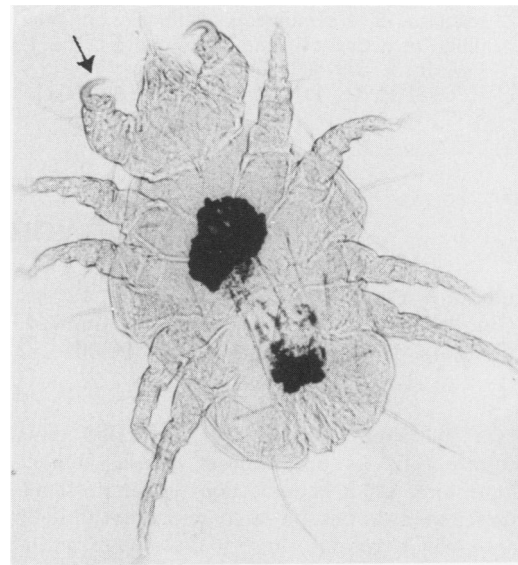

FIGURE 1. Adult: *Cheyletiella blakei*. Note palpal claws (*arrow*). ×150.

Discussion

Cheyletiella blakei has not been reported from Canada and the present case is perhaps the first record of infestation of a cat with any species of *Cheyletiella*. However, similar reports from other parts of the world are well documented (4, 7, 8, 11, 12, 13, 15, 16, 17).

It may be noted, though, that in those reports up to the late sixties, the mites from cats as well as from dogs have been referred to as *C. parasitivorax* (from the rabbit), the type species of the genus. The assigning of *Chey-*

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FIGURE 2. Comb-like structure on the tarsus of *Cheyletiella blakei*. ×1400.

letiella from dogs and cats to this species is probably based on the morphological similarity that all these mites bear the palpal claws and tarsal combs characteristic of the genus. It would appear that until that time any distinguishing features between *Cheyletiella* species have probably been overlooked. Smiley (13, 14) has since discovered, however, a significant morphological difference in the shape of the sense organ on genu 1 between the different *Cheyletiella*. Based on this difference, he has described two new species, namely, *C. yasguri* from the dog (13) and *C. blakei* from the cat (14). The sense organ of the former is heart-shaped and that of the latter oval-shaped. *C. parasitivorax* has a globular sense organ. Smiley (14) concludes, furthermore, that rabbits maintain *C. parasitivorax*, dogs, *C. yasguri* and cats, *C. blakei*. In this connection, it may be noted that while Foxx and Ewing (2) describe their successful experimental infestation of rabbits with *C. yasguri*, they make no mention of the results from their concurrent studies of the same mite on cats. Obviously, the question of cross infestation of animals with the different *Cheyletiella* species remains to be clarified. Nonetheless, in those reports of natural *Cheyletiella* infestations, in which the sense organ of the mites has been described, *C. yasguri* and *C. blakei* have been recovered only from dogs and cats, respectively (1, 3, 6, 13, 14, 17). This would indicate the possible existence of host specificity of *Cheyletiella* species (5). It is likely, therefore, that the *C. parasitivorax* from cats in reports previous to Smiley's work (14) may well be *C. blakei*.

Whatever the host specificity of *Cheyletiella* spp., it is clear from the present findings that, like *C. yasguri* (1), *C. blakei* completes its life cycle on a single host and responds equally well to acaricide treatment. The present case confirms most other reports (6, 7, 8, 11, 12, 16) that *C. blakei* induces dermatosis in cats. Furthermore, *Cheyletiella* from cats has been associated with skin problems in man in other countries (7, 8, 11, 12, 15). Indeed, the public health aspect of *C. yasguri* from dogs with dermatosis has recently been reported

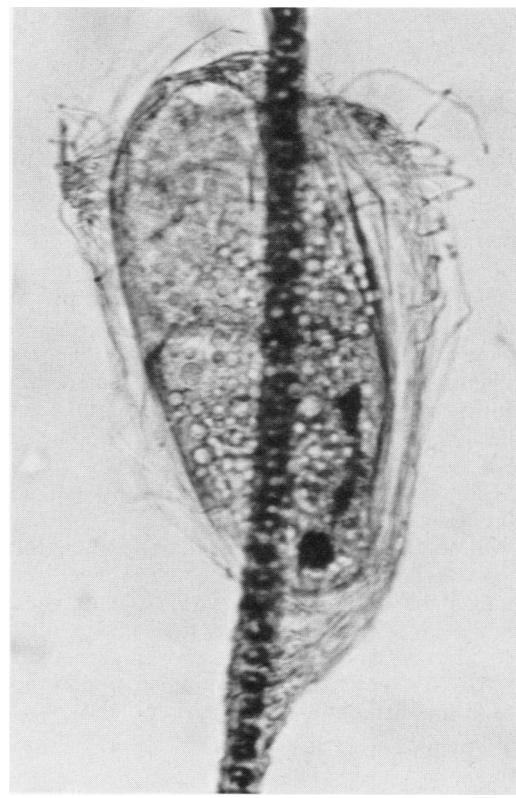

FIGURE 3. Early developmental stage of *Cheyletiella blakei* larva in egg. Note fine strands woven around egg (cocoon-like) and fixing it to hair. ×375.

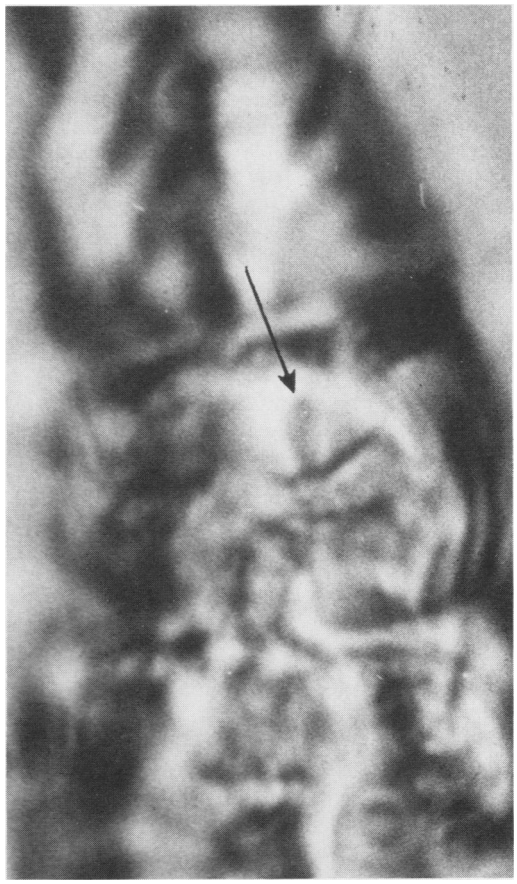

FIGURE 4. Oval-shaped sensory organ (*arrow*) on genu 1 of *Cheyletiella blakei* ×1600.

from this area (1). However, in the present case there is no history of persons being affected with *C. blakei*. It might be that the rigorously followed practice of shampooing and grooming the cat had perhaps minimized the chance of mites passing to the handlers of the animal.

The source of *C. blakei* for this cat has not been determined, except that any of two possibilities may well be conjectured: (a) other infested animals at the commercial kennel from which the cat was bought or (b) the owner's other cat with a history of similar skin sores. In any event, the present case suggests that *C. blakei* may well assume some importance in feline medicine in the Montreal area.

Summary

Infestation of a cat with *Cheyletiella blakei* is reported, for the first time from Canada. The cat was suffering from dermatosis and pruritis. When the animal was treated with an acaricide the condition disappeared. Virtually all the developmental stages of the mite were demonstrated in skin scrapings, indicating that the parasite completes its life cycle on a single host.

Résumé

Le présent article rapporte, pour la première fois au Canada, l'infestation d'un chat par *Cheyletiella blakei*. L'animal souffrait d'une dermatite prurigineuse qui disparut à la suite d'un traitement avec un acaricide. L'examen microscopique de grattages de la peau permit de démontrer pratiquement tous les stades évolutifs de la mite; ce résultat révèle que le parasite complète son cycle vital sur un même hôte.

Acknowledgments

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ANALYSE DE VOLUME/BOOK REVIEW

The Behavior of Domestic Animals, Third Edition. Edited by E. S. E. Hafez. Published by Baillière Tindall, London. 1975. 544 pages. Price £12.50. Sold by Collier Macmillan of Canada $39.95.

The third edition is an extensive revision. New concepts and mechanisms on nervous and endocrine systems and behaviour are explained and developed. It is of interest to mention that many additions have been made in all the chapters even if this third edition has nearly one hundred pages less than the first one.

Basic concepts have been dropped or condensed, more particularly behavioural pharmacology, techniques of measurement and evaluation. New chapters of interest for veterinarians have been emphasized, namely ingestive mechanism and behaviour, sexual behaviour and maternal behaviour. After each chapter complete references are added. It is an expensive book at the Canadian price ($39.95) compared to the U.K. price £12.50 (less than $25.00).

Since 1962 the Behaviour of Domestic Animals remains the book on ethology best suited for veterinarians and veterinary students.

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La première édition de ce volume paraissait en 1962. À l'époque, le livre avait fait école, c'était un document qui réunissait les travaux les plus pertinents sur le sujet.

Depuis, des prix Nobel de médecine ayant été attribués à trois chercheurs œuvrant sur le comportement animal, l'éthologie animale a mérité ses lettres de noblesse.

La troisième édition de ce livre demeure une œuvre de collaboration, Hafez s'est entouré de plus de vingt-cinq collaborateurs. Les chapitres ont été revisés et remis à jour. Ceci veut dire des additions substantielles en ce qui touche principalement les mécanismes nerveux et endocrinien du comportement. Certaines parties de chapitres ont été extraites et développées en un tout substantiellement plus cohérent comme les chapitres sur le comportement ingestif, le comportement sexuel et le comportement maternel.

L'auteur a coupé une centaine de pages sur sa première édition. Pour le vétérinaire, les additions sont précieuses, nécessaires et professionnellement utiles. Ce qui fut enlevé représentait pour eux une valeur sûre fortement ancrée. Pour les étudiants cependant je crois que toutes ces notions, comme l'effet des drogues sur le comportement, auraient encore été utiles. Il est vrai cependant que ce chapitre peut être vu dans le cadre d'autres disciplines et ceci représentait une économie d'espace.

C'est un livre qui mérite de figurer dans la bibliothèque d'un vétérinaire, c'est un livre de classe pour les étudiants en médecine vétérinaire.

Je déplore qu'il se vende £12.50 (moins de $25.00) chez l'éditeur à Londres et que nous soyons obligés de le payer $39.95 chez l'intermédiaire canadien Collier MacMillan. *O.Garon.*